

AMENDMENTS TO THE SPECIFICATION:

Page 1, before line 3, insert the following as separate paragraphs:

--BACKGROUND

1. Technical Field--.

Please amend the paragraph beginning at page 1, line 3, as follows:

~~This invention relates~~ Exemplary embodiments of the present invention
relate to communication networks that enable data transmission to mobile
terminals and a method of transmitting data to such a mobile terminal.

Page 1, before line 6, insert the following as a separate paragraph:

--2. Description of Related Art--.

Please amend the paragraph beginning at page 1, line 20, as follows:

It is known (see 'Flexible Network Support for Mobility', X Zhao, C
Castellucia & M Baker, MOBICOM 98, Dallas, Texas, pages 145-156) how to
provide support for a mobile terminal using a number of wireless communication
networks. Because of the mobility of the host, the network connectivity of the
host, and hence its network address, will keep changing. Hosts communicating
with the mobile terminal therefore send data to the mobile ~~terminals~~ terminal's
'home' network address and this data is intercepted by a fixed host, called a home

agent, which is connected to the 'home' network of the mobile terminal. The mobile terminal is in communication with the home agent so that the home agent is always aware of the network address of the mobile terminal (or network addresses if the mobile terminal is connected to more than one network), enabling the home agent to forward data packets for the mobile terminal to the mobile terminal. If the mobile terminal is connected to a number of networks and is receiving different types of data flow (e. g. file transfer, WWW (World Wide Web) downloads, voice, etc.) then the mobile terminal will inform the home agent of the different networks to which it is connected and also instruct the home agent which network to use for each different data flow.

Please amend the paragraph beginning at page 2, line 15, as follows:

~~The main~~One advantage of ~~the present~~exemplary embodiments of the present invention is that the routing of the data to the mobile terminal is performed by the home agent rather than the mobile terminal, making the terminals less complex, which should lead to smaller, cheaper terminals which have lower power consumption.

Please amend the paragraph beginning at page 3, line 30, as follows:

~~The~~An exemplary embodiment of the present invention also provides a communications system for effecting data transfer from a first computer, attached

to a communications network, to a mobile communications terminal which has an allocated home address in the communications network and a home agent to manage communication between data sources in the communications network and the mobile terminal when the terminal is not at its home address, wherein; the mobile communication terminal is configured for simultaneous communication via a plurality of types of wireless communications channels; characterised in that the mobile terminal sends to its home agent information about the current availability of the different communications channels, the home agent selecting the appropriate communications channel in accordance with the type or characteristics of data to be communicated to the mobile terminal.

Page 4, before line 9, insert the following as a separate paragraph:

--BRIEF DESCRIPTION OF THE DRAWINGS--.

Please amend the paragraph beginning at page 4, line 9, as follows:

~~The~~ Exemplary embodiments of the present invention will now be described with reference to the following Figures.

Page 5, before line 8, insert the following as a separate paragraph:

--DETAILED DESCRIPTION OF NON-LIMITING EXEMPLARY EMBODIMENTS--.

Please amend the paragraph beginning at page 8, line 16, as follows:

The Mobile IP registration packet 50 (shown in Figure 5) contains a number of fields. For further details regarding Mobile IP, see RFC 2002, IP Mobility Support, C. Perkins, October 1996 (available from <http://www.ietf.org>). The numerals across the top of the packet (0,1,2,3) indicate the size of each field in octets (groups of 8 bits). Field 51 (the Type field) occupies an octet of the packet and indicates the version of the Mobile IP protocol that is being used. Field 52 contains a number of flags, which if set, cause the home agent to respond to the Mobile IP registration packet in a particular manner. ~~The only~~ One of particular interest to ~~the exemplary embodiments of the~~ present invention is the 'S' flag which, when set, causes the home agent to retain its prior mobility bindings (the other flags are described in RFC2002). The Lifetime field 53 contains the length, in seconds, for which the registration packet is valid. If the field is set to 0 it causes the previous registration packet from that mobile terminal to be cancelled by the home agent and if all the bits in the field are set to 1 (the field occupies two octets, i.e. 16 bits) an infinite lifetime is established (i.e. the registration packet remains valid until it is cancelled by a subsequent registration packet). The Home Address field 54 contains the home network address for the mobile terminal, the Home Agent field 55 contains the network address for the home agent and the Care-of-Address field 56 contains the care-of-address that is used when forwarding data to the newly established network creation. The Identification field

57 contains a numerical string generated by the mobile terminal when the registration packet is generated. This numerical string is returned to the mobile terminal by the home agent when the home agent is acknowledging receipt of the registration packet, so the registration packet can be paired with its acknowledgement. The Extensions field 58 may be used to extend the functionality of Mobile IP.

Please amend the paragraph beginning at page 9, line 8, as follows:

The Registration packet allows one care-of-address to be registered for a mobile terminal. Figure 6 shows the Mobile IP extension that is used in exemplary embodiments of the present invention, and one of these extensions is used for each network connection that is to be registered. The Extension field 61 is used to indicate the type of Mobile IP extension and the Length field 62 contains the length of the Mobile IP extension (in bits). Both the Extension field and the Length field are mandatory for Mobile IP extensions. The Network Type field 63 contains a string which indicates the network to which a connection has been made and the Care-of-Address field 64 contains the care-of-address applicable for that network. The use of one or more extensions 60 informs the home agent of all of the networks to which the mobile terminal is connected and the type of networks to which it is connected. The data in the Network Type field 63 may indicate network characteristics such as available bandwidth, latency, cost etc., or

this data may be stored in the home agent and be retrieved by the home agent in response to the contents of the Network Type field 63.

Please amend the paragraph beginning at page 10, line 22, as follows:

As is stated in Mobile IP RFC 2002, when an extension numbered in the range 0 to 127 is encountered but not recognised, the packet containing the extension must be dropped. When an extension numbered in the range 128 to 255 is encountered which is not recognised, that particular extension is ignored, but the rest of the packet data can still be processed. For the mobile IP extension used in exemplary embodiments of the present invention, the registration packet contains one of the care of addresses available to the terminal that can be used by the home agent if the extension is not recognised. The extension number used must therefore be in the range 128 to 255 (at least with current systems).

Please amend the paragraph beginning at page 11, line 1, as follows:

It will be readily understood that exemplary embodiments of the present invention may be implemented using software and that software suitable for carrying out the method of exemplary embodiments of the present invention may be supplied on conventional computer media, e.g. floppy disk, CD-ROM, DVD, etc., or over a computer or communications network. The vertical handover prototype system was implemented using Java and C on a Linux kernel (version

2.1). Java was preferred because it is suitable for rapid prototyping, however C was also required to interface with the operating system. Linux was chosen for the implementation of the system because it is one of the few operating systems with an advanced and flexible network layer, allowing for example multiple active interfaces on the terminal and multiple IP addresses associated to a single interface. Other operating systems (e. g. Windows 98, Windows NT, BeOS, etc.) and programming languages (e.g. C+ +, Visual Basic, etc.) may be used if they provide the required features and flexibility.

Please amend the paragraph beginning at page 11, line 14, as follows:

During initialisation, the mobile terminal determines which networks are available for connection. This information is sent to the home agent using the standard mobile IP registration packet with an extension according to an exemplary embodiments of the present invention for each available network. The “best” network may be selected by comparing the bandwidths and availability of all the networks and selecting the one with the highest bandwidth. Alternatively, the different classes of traffic may be transmitted via different types of transmission links depending on the most appropriate network available. When the network availability changes, the mobile terminal sends a new registration packet to the home agent and both the mobile terminal and home agent re-evaluate which network(s) to use for communication.

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Please amend the paragraph beginning at page 19, line 1, as follows:

~~CLAIMS~~ What is claimed is.